

USSR

UDC 669.721.5'884:539.4:539.56

GUR'YEV, I. I., YELKIN, F. M., KUDRYASHOV, V. G.

"Dependence of the Mechanical Properties of Magnesium and Binary Mg-Li Alloys on Temperature"

V sb. Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 123-127 (from RZh-Metal-lurgiya, No 4, Apr 72, Abstract No 4I654)

Translation: A study was made of the effect of alloying Li in the amount of 4, 8, and 14% on the mechanical properties of Mg at test temperatures from -196 to +300°. The increase in Li content in the alloys promotes an increase in plasticity by 5-10 times. The strength decreases by 2-3 times. The increase in the amount of beta-phase with body-centered cubic lattice Li in Mg-Li alloys increases the temperature sensitivity of their strength characteristics. For binary Mg-Li alloys, in contrast to pure Mg, the presence of a plasticity trough at defined test temperatures is characteristic. This indicates the inclination of these alloys toward embrittlement, caused probably by the presence of Na in the alloys. Alloying Mg with lithium essentially reduces the sensitivity of Mg-Li alloys to notching. Three illustrations and a 7-entry bibliography.

1/1

USSR

UDC 669.721.5:548.53

OVECHKIN, B. I., GUR'YEV, I. I., DZYUBENKO, M. I., IL'INA, R. F.

"Peculiarities of the Variations in Structure During the Process of Deformation and Recrystallization of Magnesium Alloy Sheets"

V sb. Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 61-64 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 4I653)

Translation: A study was made of the variation of the structure of MA8 and MA2-1 alloy sheets after warm rolling and annealing. New data were obtained on the peculiarities of recrystallization in these alloys. It was established that in the deformation bands in the surface layers in comparison with the central layers, the temperature range of recrystallization is shifted to lower temperatures. These characteristic features of recrystallization can be used when making sheets in the semipeened state. 3 illustrations and 10-entry bibliography.

1/1

USSR

UDC 669.721.5'5'296'73:548.53:539.4

DRITS, M. YE., GUR'YEV, I. I., BAKHTINA, T. M.

"Recrystallization Diagram and Mechanical Properties of VMDZ Alloy as a Function of the Degree of Deformation and the Annealing Temperature"

V sb. Struktura i svoystva legk. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 64-68 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41657)

Translation: A study was made of the effect of structure on the mechanical properties of sheets of the new Mg-alloy, VMDZ of the Mg-Zn-Zr-Cd-La system. It was established that the maximum strength characteristics are achieved in the presence of an unrecrystallized or partially recrystallized structure and decrease stepwise as the degree of recrystallization and grain size increase. The optimal annealing temperature is 250-300°C. The recrystallization diagram of the VMDZ alloy and the graph of the mechanical properties as a function of grain size and annealing temperature were constructed. Three illustrations and two tables.

1/1

USSR

UDC 669.721.018.9

BONDAREV, B. I., GUR'YEV, I. I.

"Some Characteristics of Manufactured Series and New Deformable Magnesium Alloys"

Metalloved. splavov legkikh met. -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 181-185 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G225)

Translation: The effect of admixtures on the structure and properties of MA8-1, MA8, and VM65-1 alloys is analyzed. The quantitative law determining the grain size and technological nature of the ingot during its deformation is derived. The possibility of improving the corrosive resistance and mechanical properties of the intermediate products manufactured from these alloys is established. There are 4 illustrations and 1 table.

1/1

- 34 -

USSR

ANSYUTINA, A. Ye., SOKOLOVA, A. I., SIVKISOV, Z. N., USKIN, G. Y., GUN'YAN, I. I.,  
CHUKHROV, M. V., and AL'TMAN, M. B., Moscow

"The Effect of Ultrasonic Treatment on the Structure and Properties of Ingots  
of a Magnesium Alloy"

Moscow, Izvestiya Akademii Nauk SSSR, Metallurgiya, No 4, Jul-Aug 70, pp 70-81

Abstract: Results are presented of an investigation of the effect of ultrasonic treatment on the crystallization process of a flat ingot (550 x 140 mm) of the MA2-1 alloy of the Mg-Al-Zn-Mn system. The method of introducing ultrasonic vibrations into the hole of the ingot is described and the macrostructure and microstructure of ingots cast with and without ultrasonic treatment are shown. Ultrasonic treatment of the MA2-1 alloy ingot during crystallization under continuous casting conditions makes it possible to diminish the porosity, to decrease the H-content by a factor of 2, and to improve the mechanical properties by 10-20%. To make the ultrasonic treatment efficient, it is necessary to locate the emitter at 1/3 the depth of the hole and to maintain the relation of the sound emission surface to the molten metal surface  $\approx 1/2$ .

1  
USSR

ANISYOTINA, A. Ye., et al., Izvestiya Akademiya Nauk SSSR, Metallurgiya, No. 1, 1970, pp 76-81

The development of cavitation in the molten metal is the determinant in the crystallization mechanism of magnesium alloy ingots under the effect of ultrasound.

2/2

USSR

UDC 669.721.018.26

BONDAREV, B. I., and GUR'YEV, I. I.

"Special Features of the Production of Serial and New Deformable Magnesium Alloys"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 181-185, resume

Translation: The effects of admixtures on the structure and properties of the MA8-1, MA8, and VM65-1 alloys are analyzed. A quantitative regularity was established which specifies the grain size and technological condition of the ingot by its deformation. The possibility was established for increasing the corrosion resistance and improving the mechanical properties of intermediate products. Four figures, one table.

1/1

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--MECHANISM OF THE RADIATION CROSSLINKING OF SOLID RUBBERS -U-

AUTHOR--(05)--KOZLOV, V.T., GURYEV, M.V., YEVSEYEV, A.G., KASHEVSKAYA, N.G.,  
ZUBOV, P.I.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 592-601

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--GAMMA RADIATION, POLYMER CROSSLINKING, FREE RADICAL, EPR  
SPECTROMETRY, GEL, NATURAL RUBBER, POLYISOPRENE, POLYCHLOROPRENE,  
POLYBUTADIENE, BUTADIENE STYRENE RESIN, COPOLYMER, POLYSILOXANE,  
CHLOROFLUOROCARBON COMPOUND, FLUORINATED ORGANIC COMPOUND, SYNTHETIC  
RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1995/1207

STEP NO--UR/0459/70/012/003/0592/0601

CIRC ACCESSION NO--AP0116672

UNCLASSIFIED



2/2 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116672

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES OF 22 DIFFERENT RUBBERS WERE IRRADIATED BY A PRIME60 CO SOURCE. THE FREE RADICAL YIELDS (G SUBR) WERE DETD. BY EPR SPECTROMETRY. THE CROSSLINK YIELDS (G SUBC) WERE DETD. BY THE SWELLING DEGREE OF THE SAMPLES AND/OR THE GEL FRACTION CONTENTS. FOR MOST OF THE SAMPLES (NATURAL RUBBER, POLYISOPRENES, POLYCHLOROPRENES CONTG. S BONDS, POLYBUTADIENES, BUTADIENE STYRENE COPOLYMERS, BUTADIENE METHYLSTYRENE COPOLYMER, ETHYLENE PROPYLENE COPOLYMERS, POLY(DIMETHYLSILOXANE), POLY(DIMETHYLMETHYLVINYLSILOXANES, POLY (DIMETHYLMETHYLPHENYLSILOXANES), POLY(DIMETHYLDIPHENYLSILOXANE)) G SUBC GREATER THAN G SUBR-2. THE HALOGEN CONTG. RUBBERS (POLY(TRIFLUOROCHLOROETHYLENE), VINYLIDENE FLUORIDE HEXAFLUOROPROPYLENE COPOLYMER, OR VINYLIDENE FLUORIDE TRIFLUOROMETHYL PERFLUOROVINYL ETHER COPOLYMERS) HAD G SUBR-2G SUBC SIMILAR TO 1. THE RADIATION CROSSLINKING OF RUBBERS CONSISTS OF FAST PROCESSES (SIMILAR TO 10 PRIME NEGATIVE 16 SEC) WHICH FOLLOW THE ACTIVATION OR IONIZATION AT LOCATIONS CLOSE TO POTENTIAL CROSSLINKS, AND SLOWER PROCESSES INVOLVING THE TRANSFER OF EXCITONS OR CHARGES. FACILITY: NAUCH.-ISSLED. INST. REZ. PROM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 541.64:678.76

KOZLOV, V. T., GUR'YEV, M. V., YEVSEYEV, A. G., KASHIVSKAYA, I. G., ZOLOV, P. I., Scientific Research Institute of the Rubber Industry, Moscow, State Committee for Chemistry; Scientific Research Physico Chemical Institute imeni L. Ya. Karpov, Moscow, State Committee for Chemistry

"Investigation of the Mechanism of Radiation Cross-Linking Processes in Hard Rubber"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol XII, No 3, Mar 70, pp 592-601

Abstract: The mechanism of radiation cross-linking was studied at 77°K in 22 elastomer compounds of various structure -- saturated, unsaturated, aromatic and halogen substituted hydrocarbons and polysiloxanes with side groups  $-CH_3$ ,  $-CH=CH_2$ ,  $-C_6H_5$  in various combinations and ratios. In nearly all elastomers studied, the cross-link yield was considerably greater than half the radical yield, based on the assumption that two radicals may form a cross link. An exception to this rule is the case of alkyl halide elastomers in which the radical yield is approximately twice the cross-link yield. In many hydrocarbon elastomers, an increase in the capacity of the radicals to form radicals leads to a reduction in the cross-link yield, the ratio of

1/2

USSR

KOZLOV, V. T., et al, Vysokomolekulyarnyye Soyedineniya, Vol XII, No 1, Mar 70, pp 592-601

the radical yield to twice the cross-link yield varying from 1/10 to 1/2. In a number of polysiloxanes these ratios vary depending on the presence of isolated double bonds lowers the radical yields and increases the cross-link yields. Both radical and cross-link yields are considerably reduced by aromatic groups, the cross-link yield being reduced to a greater degree. Radiation cross-linking is attributed to a mechanism which takes place during exposure and goes through a number of electron processes. These include rapid processes (of the order of  $10^{-10}$  second) immediately following ionization or excitation of regions in close proximity and oriented for molecular cross linking; the sequence also includes processes which are slowed down by transfer of an exciton or excited charge into these regions. A contribution is also made by processes of the inter-action of free radicals and the ions produced when radicals capture charges. The molecular structure of the elastomer determines the relative contribution made by each of these processes to the overall cross-link yield.

2/2

USSR

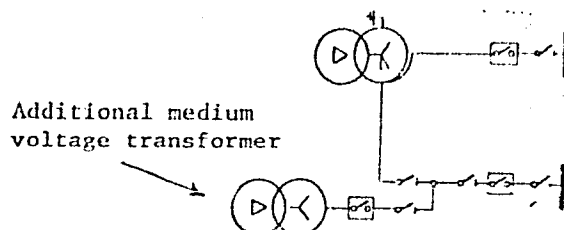
UDC 621.3.062.38(083.9)

GUR'YEV, R. G., STANISLAVSKIY, R. L.

"Standby Electric Power Supply Unit"

USSR Author's Certificate No 265267, Filed 4 Feb 67, Published 23 Jun 70 (from RZh-Elektrotehnika i Energetika, No 3, Mar 71, Abstract No 3Ye88P)

Translation: A standby electric power supply unit SN ES i PS [medium voltage, electric power plant, and substation] equipped with a coupling autotransformer has been patented. It is distinguished by the fact that in order to improve the reliability, an additional medium voltage transformer is included in the autotransformer coupling circuit on the medium voltage side (see the Figure).



1/1

USSR

GRANBERG, A. G., GUR'YEV, V. P.

"Problems of Modeling of Interregional Communications"

Metody i Modeli Territor. Planir. [Methods and Models of Territorial Planning -- Collection of Works], No 1, Novosibirsk, 1971, pp 222-265 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V497).

NO ABSTRACT.

1/1

- 17 -

USSR

UDC 621.316.722.1 (088.8)

VILENKIN, A.G., GUR'YEV, YE. A.

USSR Author's Certificate No 275163, filed 13 Feb 69, published 12 Oct 70 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 43695P)

Translation: A d-c voltage regulator is proposed which contains a switch [klyuch-evoy] control element, a d-c amplifier, and a comparing divider. The regulator is distinguished by the fact that, with the object of decreasing the pulsations of the output voltage and improving the dynamic characteristics, a control transistor is used in it; the collector of the transistor is connected simultaneously to one of the outlets of the feedback winding of the transformer of the blocking oscillator of the control element and to a capacitor coupled with the input terminal of the regulator. The emitter is connected to the output terminal, and the base to the d-c amplifier. 1 ill.

1/1

- 10 -

USSR

UDC 547.51 +541.15 + 661.718.1

BABKINA, E. I., VINOGRADSKAYA, L. S., DOBROVA, Ye. I., and GUR'YEVA, N. A.,  
Branch of the Physical Chemical Scientific Research Institute imeni L. Ya.  
Karpov

"Radiochemical Synthesis of Organophosphorus Compounds Based on Indene and  
Phosphorus Trichloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 2084-2085

Abstract: Gamma irradiation of the mixtures of indene and  $\text{PCl}_3$  under conditions favoring either addition of  $\text{PCl}_3$  to the double bond or polymerization as well as under conditions practically excluding the possibility of polymerization yields, fails to induce the addition of  $\text{PCl}_3$  to the indene along the double bond. This may be due to an extremely unsaturated state of the indene double bond leading principally to the polymerization products.

1/1

015 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--REARRANGED IONIC MOLECULAR REACTIONS IN MIXTURES OF NITROGEN WITH  
CHLOROCARBONS. I. NITROGEN CARBON TETRACHLORIDE -U-  
AUTHOR--(02)-GURYEVA, N.A., FOMIN, O.K.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 279

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, NITROGEN, CARBON TETRACHLORIDE,  
MASS SPECTROMETER, INTRAMOLECULAR MECHANICS/(U)MKH1303 MASS SPECTROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0868

STEP NO--UR/0456/70/004/003/0279/0279

CIRC ACCESSION NO--AP0137896

UNCLASSIFIED



2/2 015

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137896

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ION MOL. REACTIONS IN N WITH CCL SUB4 MIXTS. WERE STUDIED WITH THE AID OF THE MASS SPECTROMETER MKH,1303.

IN THE REACTION OF N PRIME POSITIVE AND N SUB2 PRIME POSITIVE WITH CCL SUB4, CNCL PRIME POSITIVE FORMED. THE RATE OF THE REACTION CONST. IS  $5.1 \times 10^{-11}$  ML MOLE PRIME NEGATIVE<sup>-1</sup> SEC PRIME NEGATIVE<sup>-1</sup> WHICH CORRESPONDED TO THE EFFECTIVE COLLISION OF N PRIME POSITIVE WITH CCL SUB4,  $2.4 \times 10^{-12}$  SEC PRIME NEGATIVE<sup>-2</sup>. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 539.3

GUR'YEVA, N. I., PYKHTEV, YU. A.

"Evaluation of the Stress State in a Toroidal Shell of Variable Cross Section"

Sb. nauch. tr. Perm. politekhn. in-t (Collection of Scientific Works. Perm' Polytechnical Institute), 1971, No. 98, pp 22-29 (from Fiz-Mekhanika, No 3, Mar 72, Abstract No 3V188)

Translation: In a strength calculation a shell of variable radius is replaced by two shells of constant radius, the greatest and least radii of the initial shell. The order of the stresses arising in a toroidal shell of variable radius is thus determined. The load is a uniform internal pressure. The results of the calculation are shown in the form of graphs. A calculation showed that the greatest stresses in the torus are the points located on the external surface close to the seal at the inner contour. Experimental results are also given. A. G. Teregulov.

1/1



GUR'YEVA, T.S.

SPRS 66,449

14 JULY 72

42

# UTILIZATION OF THE WATERS IN A HIGH-ENERGY COMPLEX IN A LIFE SUPPORT SYSTEM

Article by T.S. Gur'yeva, N. A. Krasova and L. M. Krasova  
Chernov, Moscow, Akademiya Kosmicheskoy Biologii i  
Kosmonavtiki (Current Problems in Space Biology and Medicine),  
Moscow, 1971, pp 102-103.

1. In those variants of bioluminescent life support  
systems which include a link of higher plants as a source of  
the renewable part of the ration and as a component of the  
atmosphere, the oxygen balance does not make it possible to  
carry out processes of thermal and liquid-phase mineraliza-  
tion of greenhouse wastes.

In these cases for the preparation of nutrient media  
the plants must use minerals from the power.

The wastes of higher plants contain a considerable  
quantity of mineral elements. A promising method has been de-  
veloped for returning them without oxygen expenditure.

2. It is known that by the growing of waste species  
and leaves it is possible to obtain a juice from which by  
boiling it is possible to extract a protein concentrate. The  
yield of juice from the economically unusable part of the  
plants is from 62-77% of the weight of the initial product.  
The extract contains all the principal mineral elements in  
a quantity up to 30% of the plant requirements.

3. The collected juice was used as the initial nu-  
trient solution for cultivating *Chlorella*. The results of  
cultivation of *Chlorella* revealed the possibility of using  
the juice for its cultivation.

I72 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--REACTION OF MOLYBDENUM WITH OXIMES. REACTION OF MOLYBDENUM WITH  
MONO AND DIOXIMES OF ALPHA FURIL IN THE PRESENCE OF STANNOUS CHLORIDE  
AUTHOR--(02)-PESHKOVA, V.M., GURYEVA, YE.S.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM, 1970, 11,1, 79-83

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXIME, MOLYBDENUM COMPLEX, SPECTROPHOTOMETRIC ANALYSIS, TIN  
CHLORIDE, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/0586

STEP NO--UR/0189/70/011/001/0079/0083

CIRC ACCESSION NO--AP0119504

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119504

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEX FORMATION OF  
MOLYBDENUM WITH MONO AND DIOXIMES OF ALPHA FURIL IN THE PRESENCE OF SNCL  
SUB2 WAS INVESTIGATED SPECTROPHOTOMETRICALLY AT 390 AND 520 MM. THE  
RATIO OF COMPONENTS MO(V)-SN(III)-MONOXIME WAS 2 TO 6 TO 4. IN CASE OF  
DIOXIME THE RATIO COULD NOT BE ESTABLISHED ON ACCOUNT OF THE INSTABILITY  
OF THE COMPLEX.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--USE OF A COMPUTER TO CALCULATE SECOND MOMENTS OF EXPERIMENTAL NMR  
SPECTRA -U-  
AUTHOR--(04)-FALALEYEV, D.V., FALALEYEVA, L.G., LUNDIN, A.G., GURYEVICH,  
A.S.  
COUNTRY OF INFO--USSR  
SOURCE--PRI8. TEKH. EKSP. 1970, 1, 249  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--NMR SPECTRA, COMPUTER CALCULATION, SPECTRUM ANALYSIS,  
MATHEMATIC MODEL, AUTOCORRELATION FUNCTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/1553 STEP NO--UR/0120/70/001/003/0249/0249  
CIRC ACCESSION NO--AP0106299  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106299

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO FIND THE OPTIMUM METHODS FOR SPECTRUM PROCESSING WITH BACKGROUND NOISES THEIR MATH. MODELS WERE USED. THE MODELS OF THE NMR SPECTRA WERE SELECTED IN THE FORM OF A GAUSSIAN CURVE AND ALSO AS AN UNRESOLVED DOUBLET. THE NOISES WERE MODELED AS A SERIES OF ORDINARY NOS. WITH AN AUTOCORRELATION FUNCTION  $K(\tau) = \sigma^2 \exp(-\tau/\tau_c)$  WHERE  $\sigma$  IS ROOT MEAN SQUARE VALUE OF THE NOISES,  $\tau_c$  IS CONST. OF TIME FOR THE FILTER OF LOWER FREQUENCIES AT THE RADIOSPECTROMETER EXIC. THE 2ND MOMENT WAS CALCD. ACCORDING TO THE ABSORPTION CURVE WHICH WAS REGENERATED BY INTEGRATION OF THE DERIV. FACILITY: INST. FIZ., KRASNOYARSK, USSR.

UNCLASSIFIED



Pesticides

USSR

UDC 542.938:547.26'118

NIKONOROV, K. V., CURYLEV, E. A., BEL'SKIY, V. Ye., and MAYOROVA, T. A.,  
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov Academy  
of Sciences USSR

"Kinetics and the Mechanism of Hydrolysis of Chlorophos and Some of Its  
Analogues"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1925-1929

Abstract: The kinetics of aqueous hydrolysis of chlorophos and some of its  
analogues were investigated. It was shown that the reaction occurs in two  
directions, each of which exhibits several stages. A diagram for the  
hydrolysis has been proposed. The overall constant of hydrolysis and the  
constants of the reaction rates in both directions have been evaluated. It  
has been shown that changes in the molecular structure had a definite ef-  
fect on the rate and the direction of the hydrolysis.

1/1

USSR

UDC 547.26'118 + 541.127

NIKONOROV, K. V., GURYLEV, E. A., and MERTSALOVA, F. F., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences, SSSR Kazan'

"Reaction of Dialkyl- or Diaryl 1-Alkoxy-2,2,2-trichloroethyl Phosphites With Halogen Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2661-2664

Abstract: Investigating the reaction of dialkyl- and diaryl 1-alkoxy-2,2,2-trichloroethyl phosphites with halogen compounds -- benzyl bromide, acetyl chloride, acetyl bromide, benzoyl chloride, and chloral -- it was shown that the reaction of dialkyl 1-alkoxy-2,2,2-trichloroethyl phosphites with alkyl halides takes place with a strong electron donor radical being eliminated. The reaction of dialkyl- and diaryl 1-alkoxy-2,2,2-trichloroethyl phosphites with acyl halides takes place with the elimination of 1-alkoxy-2,2,2-trichloroethyl radical. With chloral the phosphites yield respective dichlorovinyl phosphates.

1/1

- 51 -

USSR

UDC: 547.26'118'113

BIRYUKOV, I. P., NIKONOROV, K. V., GURYLEV, E. A., DEYCH, A. Ya., Institute of Organic and Physical Chemistry, Academy of Sciences of the USSR

"Investigation of Organic Compounds of Trivalent Phosphorus  $\text{R}_3\text{PCl}_2$  and  $\text{CCl}_3\text{CCH}(\text{OH})\text{P}(\text{O})\text{RR}$  by the Method of Nuclear Quadrupole Resonance"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jul 72, pp 1223-1227

Abstract: A pulse method of nuclear quadrupole resonance was used at 77°K to study 23 organic compounds of phosphorus,  $\text{R}_3\text{PCl}_2$  and  $\text{CCl}_3\text{CCH}(\text{OH})\text{P}(\text{O})\text{RR}'$ . The results are given in tables and graphs. A comparison of the nuclear magnetic resonance frequencies of organochlorophosphorus compounds and their analogs -- organylchlorosilanes -- showed that the frequencies lie along a correlation line calculated by the least sum method:

$$\nu_{\text{M}}(\text{P}-\text{Cl}) = -2.40 + 1.5\nu_{\text{M}}(\text{Si}-\text{Cl}) \pm 0.15, \quad (1)$$

A comparison of the experimental and theoretical values of  $\nu_{\text{M}}$  shows that molecules containing alkoxy groups or those without an organic radical deviate from the correlation line. It was also found that the frequencies of nuclear quadrupole resonance increase with an increase in the number of methyl groups in the molecule.

1/1

- 29 -

USSR

UDC 542.938.661.718.1

ANDREYEVA, L. S., ANDRIANOV, A. A., BEL'SKIY, V. YE., VAVILOVA, M. F.,  
GURYLEV, E. A., and MINONOROV, K. V., Institute of Organic and Physical  
Chemistry named A. Ye. Arbusov, Academy of Sciences, USSR

"Hydrolysis of Dimethyl-(1-acetoxy-2,2,2-trichloroethyl)phosphonate"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 71,  
pp 2336-2338

Abstract: Chloracetophos -- dimethyl-(1-acetoxy-2,2,2-trichloroethyl)  
phosphonate -- is a fungistatic agent. It undergoes hydrolysis easily losing  
its physiological activity. There are three possible routes for its hydro-  
lysis, and it was established that all three occur simultaneously, the acetic  
acid, hydrochloric acid, and methanol being formed in the process. The  
hydrolysis is dependent on the temperature and pH -- it accelerates rapidly  
with the increase of pH. The overall rate constants for the initial reaction  
period were calculated to be  $1.2 \times 10^{-3}$ ,  $9.8 \times 10^{-3}$ , and  $4.9 \times 10^{-2} \text{ min}^{-1}$  at  
50, 70 and 90° respectively.

1/1

- 63 -

USSR

UDC 542.91+661.713.1

NIKONOROV, K. V., GURYLEV, E. A., MERTSALOVA, F. F., Institute of Organic and Physical Chemistry imeni A. Ye. Arbutov, Academy of Sciences, USSR

"Preparation of Phosphorylated Chloral Mercaptals"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 70, pp 1159-1161

Abstract: The reaction of dialkyl chlorophosphites with 2,2,2-trichloro-1-hydroxyethyl alkyl sulfides -- hemimercaptals of chloral -- yielded the corresponding phosphites. These phosphites can be oxidized and can combine with sulfur to form the corresponding phosphates and thiophosphates.

1/1

- 39 -

USSR

UDC 629.78:533.1

GURYLEV, V. G., YELISEYEV, S. N.

"The Theory of the "Pseudojump" in the Input Sector of a Channel"

Uch. zap. Tsentr. Aerogidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], Vol 3, No 3, 1971, pp 25-55, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 9, 1972, Abstract No 9.41.152, from the Resume).

Translation: A flow model is studied for a "pseudojump," formed in a channel with parallel walls when a supersonic flow is decelerated. It is shown with various assumptions concerning the distribution of the M number through the cross section of the channel that as the static pressure increases over the length of the "pseudojump," the velocity profiles and total pressure profiles are smoothed. With large M numbers of the flow ( $M > 2$ ), the flow at the beginning of the "pseudojump" separates, corresponding to the experimental data produced. 8 Figures; 4 Biblio. Refs.

1/1

- 18 -

USSR

UDC: 621.375.9

GURZO, V. V., KULIKOV, M. N., and STAL'MAKHOV, V. S.

"Experimental Investigation of a Type M Electron Beam Parametric Amplifier with Distributed Coupling"

Kiev, Izvestiya VUZov SSSR--Radioelektronika, No 5, 1970, pp 642-646

Abstract: This article presents results of the experimental investigation of an M-type parametric amplifier in the decimeter range with a backward fast cyclotron wave in which the coupling and pumping components are made of sections of flat delay structures usually used in type M beam devices. A formula is found for the gain of the amplifier, and from it is derived a second relationship connecting the constant of the pumping wave propagation with the constant fields and the pumping frequency. It is found that the gain in the pumping region is proportional to the square of the delay in the pumping wave. The delay, in turn, characterizes the degree of nonuniformity in the high-frequency pumping field in the transverse direction. A defect of this particular amplifier is the comparatively high transmission loss with pumping. The author asserts, however, that methods of reducing these losses are already becoming apparent.

1/1

- 6 -

USSR

UDC 615.616.24-003.656.6

GURZHEYEV, A. A., OTROSHCHENKO, N. M.

"Characteristic of the Combined Effect of Coal Dust and Radon Experimentally"

V sb. Materialy XXI-XXII plenumov Resp. komis. po bor'be s sili-kozom (Materials of the Twenty-first to Twenty-second Plenums of the Republic Commission for Controlling Silicosis--Collection of Works), Kiev, Naukova dumka, 1972, pp 117-123 (from RZh--Farmakologiya, Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.890)

Translation: Under the joint effect of small concentrations of radon (I) creating a radiation dose of more than 76 rads, the effect caused by coal dust on the lung tissue is intensified. The developed anthracosis had a more severe nature and was accompanied by infection of the vessels and bronchial epithelium. The effect of the coal dust in the given experiment did not lead to the accumulation of collagen in the lungs; I had no effect on this process. Under the combined effect of coal dust and I, significant shifts were observed in the composition of the peripheral blood,  
1/2

- 77 -



USSR

GURZHEYEV, A. A., OTROSHCHENKO, N. M., Materialy XXI-XXII  
plenumov, Resp. komis. po bor'be s silikozom, 1972, pp 117-123

the thagocytic activity of the laucocytes, the ascorbic acid  
metabolism and the basic electrolyte metabolism. USSR. Donetsk,  
Medical Institute.

2/2

USSR

UDC 629.7.036.54-66:536.46

GUSACHENKO, L. K.

"The Possibility of Very Low-Frequency Oscillations in a Semienclosed Volume"

Moscow, Goreniye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 100-103 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.142. Resume)

Translation: Consideration is given to the operation of a chamber with supersonic discharge of the products of an end charge, along the axis of which a rapid-burning rod is inserted without clearance. There is disclosed the possibility of oscillations connected with distortion of the conic shape of the combustion surface. Obtained by the method of small disturbances, and confirmed by the numerical calculations of a nonlinear problem, is the condition of stability:

$$-3.603 < 2(V_1 - V)/(1 - V) < 2;$$

$$V = \frac{d \ln u_1}{d \ln p}, V_1 = \frac{d \ln u_1}{d \ln p}$$

where  $u, u_1$  are the combustion rates of the fuel and the rod. 2 figures.  
4 references.

1/1

USSR

UDC 519.2

GUSAK, D. V.

"Extremal Values of Nondegenerate Wiener Processes Controlled by a Finite Markov Chain"

Teoriya veroyatnostey i mat. stat. Mezhd. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1972, vyp. 6, pp 49-53 (from RZh-Kibernetika, No 9, Sep 72, Abstract 9V38)

Translation: A study was made of the two-dimensional Markov process  $\{x_t, \xi(t)\}$  where  $x_t$  is a uniform Markov chain with a finite number of values  $k = \overline{1, n}$  and the generating matrix  $Q$ . The process is called the Wiener process controlled by the Markov chain  $x_t$  if

$$\phi(t, \alpha) = ||M(e^{i\alpha\xi(t)}, x_t = k/\xi(0) = 0, x_0 = r)|| = e^{t(Q - (\alpha^2/2)B^2)},$$

where  $B^2$  is a nondegenerate diagonal matrix with the elements  $\sigma_k^2 > 0$  ( $k = \overline{1, n}$ ).

In this paper a study was made of the joint distribution of the process  $\xi(t)$  and its maximum  $\xi^+(t) = \sup_{0 \leq u \leq t} \xi(u)$ , and some factorization identities are established.

1/1

USSR

UDC: 519.217

GUSAK, D. V., KOROLYUK, V. S.

"Asymptotic Behavior of Semi-Markov Processes With a Split Set of States"

Teoriya veroyatnostey i mat. stat. Mezhd. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1971, No 5, pp 43-50 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V90)

Translation: The authors study conditions under which a semi-Markov process defined on a discrete or compact set of states may be approximated by a Markov chain. It is assumed that the characteristics of the semi-Markov process depend on a small parameter, and thus that the entire space

of states  $E$  is split into nonintersecting classes  $E = \sum_{k=1}^n E_k$  such that the

probabilities of departure from each class tend to zero along with  $\epsilon$ . In this connection, transfers between classes at the limit (as  $\epsilon \rightarrow 0$ ) are described by an embedded Markov chain with  $m$  states, and the times of stay

1/2

USSR

GUSAK, D. V., KOROLYUK, V. S., Teoriya veroyatnostey i mat. stat. Mezhd. nauch. sb., 1971, No 5, pp 43-50

in each class are exponentially distributed. The corresponding Markov chain with continuous time on glued states may be considered the limiting case for the semi-Markov process. An algorithm is proposed for constructing asymptotic expansions in powers of  $\epsilon$  for some characteristics of the semi-Markov process. Authors' abstract.

2/2

- 10 -

USSR

GUSAK, D. V.

"One Class of Processes with Independent Increments in a Finite Markov Chain"

Ukr. mat. zh. [Ukrainian Mathematics Journal], 1975, 25, No 2, pp 170-178  
(Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1975, Abstract No 8 V66)

Translation: A two-dimensional, homogeneous markov process  $\{\xi(t), x_t\} (t \geq 0, \xi(0) = 0)$  is studied where  $x_t$  is a homogeneous ergodic markov chain with a finite number of states  $k = \overline{1, n_0}$ . The process  $\xi(t)$ , controlled by chain  $x_t$ , with stable increments, is defined by the characteristic function

$$||M(e^{ia\xi(t)}, x_t=r | x_0=k) || = \exp(t\P(u)).$$

1/2

11CCD

USSR

UDC: 519.217

GUSAK, D. V.

"A Note on Canonical and Infinitely Divisible Factorization"

Teoriya veroyatnostey i mat. stat. Mezhd. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1971, vyp. 4, pp 58-60 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V155)

Translation: Conditions for factorization of the function  $s-\psi(\alpha)$  ( $s>0$ ,  $\text{Im}\alpha=0$ ), are more precisely defined, where  $\psi(\alpha)=\ln M e^{i\alpha L(1)}$  is the cumulant of a homogeneous process with independent increments without a diffusion component. (RZhMat, 1970, 6V18.) Author's abstract.

1/1

USSR

UDC 61.4.834 - 804.4

SMAKOV, M. M., and GUSAKOV, A. F.

"Apparatus for Detecting Toxic and Explosive Gasses in the Atmosphere in Industrial Installations"

Moscow, Khimicheskaya Promyshlennost', No 3, 1971, pp 230-234

Abstract: New instruments designed for detection of toxic and explosive gasses in air of the chemical and petrochemical production plants are reviewed. The most commonly used are thermochemical gas analyzers based on measuring the heat effect of the gas burning over a catalyst. The process occurs on a heated platinum wire which serves both as a catalyst and a sensor. Advantages and disadvantages of this instrument are listed and several instruments are described. This type of instrument is usually used in monitoring of explosive atmospheres. The instruments used to determine toxic components are generally based on photocolormetric, photometric, ionization, radioisotopic and polarographic principles. Representative instruments designed to detect microconcentrations of chlorine,  $H_2S$ ,  $CO$ ,  $CH_4$ , nitrogen oxides,  $SO_2$  and  $HCl$  are discussed in detail.

1/1

- 55 -



USSR

UDC 620.171.5

LEYBMAN, A. N. and GUSAKOV, B. F., All-Union Scientific Research Institute of Chemical Machine Building, Moscow

"The Production of Thin-Walled Models of Cylindrical Shells From Optically Active Materials"

Moscow, Zavodskaya Laboratoriya, No 5, 1972, p 610

Abstract: A method is being developed at the All-Union Scientific Research Institute of Chemical Machine Building, by means of which cylindrical shells of any diameter between 70 and 140 mm, with a wall of any given thickness greater than 0.5 mm, can be obtained by the use of several revolving molds. Interchangeable molds 70, 90, 120, and 140 mm in diameter are used. If a shell is required with an external diameter differing from those enumerated, an intermediate cylinder with the assigned internal diameter is cast from a composition on the basis of resin ED-6 in the next largest mold, is coated with a separating composition without removal from the mold, and is then used as a mold for obtaining the required shell. Models with mirror-like inner and outer surfaces are obtained. Deviation from the nominal with respect to the diameter is 0.05-0.08 mm, and deviations with respect to the wall thickness are 0.01-0.015 mm. 2 references in the form of a footnote.  
1/1

- 45 -

USSR

UDC 629.7.036.3-55(088.8)

KONTOROVICH, B. M., KOBLIK, L. M., GUSAKOV, V. I., ZAKIROV, R. F.

"A Device for Controlling Fuel Supply"

Author Certificate USSR, Class 46 f, 8/01 (F 02 c), No 276644, claimed 7.10.68, published 12.03.71 (from Referativnyy Zhurnal, Aviatsionnyye i Raketnyye Dvigateli, No 11, Nov 71, Abstract No 11.34.69 P)

Translation: There is patented a device for controlling the fuel supply, for example in a gas-turbine engine, containing a pump controlled by an rpm regulator with a hydraulic retarder, a throttling cock, kinematically linked with a control lever and a valve for maintaining a constant differential at the throttling cock. The device is distinguished by the fact that with the aim of ensuring operation of the engine without surge over the entire range of regimes, in the high-pressure main line is installed a dosing needle with a supplementary hydraulic retarder for damping the relief of the rotations at regimes below the start of automatic operation of the regulator. The device is distinguished by the fact that with the aim of decreasing the stopping time of the engine, an annular flow-through channel is constructed on the throttling cock for connecting the piston cavity of the dosing needle to the main overflow line. 1 figure.

1/1

GUSAKOV V. I.

AA0101179

UR 0482

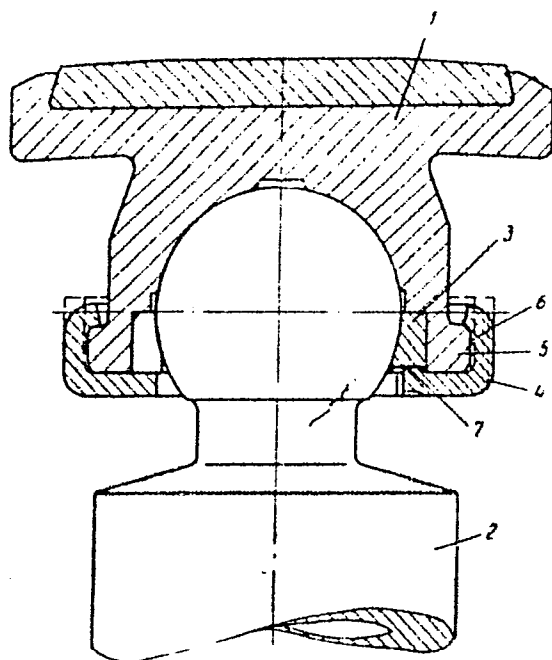
Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 1-70

242606 PLUNGER e.g. for fuel pump with spherical head, carrying a footstep bearing in the neck of which is a bracing ring, differing in the bearing having a shoulder to which is fastened a horseshoe-shaped frame of plastic to hold the ring. The ring and shoulder may have shaped slots for the frame to be pressed in. This gives a more reliable fixing of the footstep bearing. Footstep bearing 1 is connected to plunger 2 by bracing ring 3, fixed by frame 4. The material of the wall of the frame is crimped around shoulder 5 on the footstep bearing and pressed into slots 6 and 7 on the endface surface of ring 3 and shoulder 5.

2.1.68 as 1207319/24-6. POLIANSKII A.F. et al. (10.9.69)  
Bul 15/25.4.69. Class 46f, 59a. Int.Cl.F 02c, F 05b.

19850834

AA0101179



19850835

AA0101179

AUTHORS: Polyanskiy, A. F.; Kontorovich, B. M.; Koblik, L. M.;  
Gusakov, V. I.; Tokarev, N. N.; Khlopin, A. N.; Borovik, S. A.

3/3

19850836

USSR

UDC 621.396.6-181.5

ZELENTSOV, A. V., GUSAKOV, V. M.

"Increasing the Speed of Pulsed Counters made of MOS Transistors"

Elektron. prom-st'. Nauch.-tekhn. sb. (Electronics Industry. Scientific and Technical Collection), 1971, No 4, pp 22-25 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5V183)

Translation: A study is made of the nature of the stray capacitances limiting the speed of microcircuits of the MOS-structure by comparison with the theoretical speed. It is demonstrated that the stray capacitances can be significantly reduced by using complete alloying. The magnitude of the threshold voltage can be reduced by replacing the aluminum gate by a gate of polycrystalline silicon. A survey is made of other technological process methods promoting an increase in speed -- lateral and double diffusion, a process based on the application of instruments with coupled charges (multigate MOS-triodes with zero capacitances of the in and out junctions). There are 5 illustrations and a 15-entry bibliography.

1/1

- 112 -

GUSAKOV, V V.

3015 5928

6-73

# SESSION XIII

XIII-1. SELECTIVE GROWTH OF EPITAXIAL LAYERS OF  $AlGa_{1-x}$  AS SOLID SOLUTIONS  
Article by V. V. Gusakov, V. B. Maral'nikov, L. A. Rukhovich, Leningrad: Soviet Radio, III Sbornik, PO Proektirovaniye Novaya A. Shtetza Poluprovodnikov Khim. Enliy i fizika, Russian, 1972, p. 1021

The present paper is devoted to a study of the process of selective growth of layers of  $AlGa_{1-x}$  as solid solutions on the surface of protective zinc gallium arsenide. At the protective mark, aluminum oxide films are grown which were applied by pyrolysis of aluminum compounds in which the subsequent selective etching created "windows" of given configuration. The growth of the solid solution layers on the parts of the substrate not protected by oxide was carried out by the method of liquid epitaxy from a melt of gallium at temperatures of 950-1000°C in graphite containers of special configuration. An estimate of the quality of the epitaxial layers and reproducibility of their composition with respect to area and from process to process was made by comparison of the parameters of the light diode obtained on the grown layers by the method of selective zinc diffusion.

USSR

UDC: 547.26'118

D'YAKOV, V. M., GUSAKOVA, G. S., POKROVSKII, Ye. I., and D'YAKOVA, T. L.,  
Leningrad Institute of Textiles and Light Industry imeni S. M. Kirov and the  
Institute of High-Molecular Compounds, Academy of Science SSSR

"Structure and IR Spectra of Para- and Ortho-Substituted Benzoylbis(triorgano-  
siloxy)phosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1035-1040

Abstract: A study was made of the IR spectra of the new organosilicon-  
phosphorus compounds of the type  $\text{XC}_6\text{H}_4\text{COP(O)(OSiR}_3)_2$  containing various substit-  
uents in the ortho- and para-positions. Correlations were discovered between  
the frequency shift in the vibrations of the  $\text{C=O}$  group with the Hammett's  
constant, and the  $\text{P=O}$  group with induction constants of substituents.

1/1



USSR

UDC 517.934

GABASOV, R. and GUSAKOVA, M. L., Belorussian State University imeni  
V. I. Lenin

"Principle of the Maximum for Common Discrete Systems"

Minsk, Differentsial'nyye Uravneniya, Vol 7, No 9, Sep 71, pp 1581-1590

Abstract: The authors prove the necessary conditions of optimality for objects described by nonlinear difference equations that are not resolved relative to the leading difference. They study separately the nondegenerate and the degenerate cases. Since the necessary conditions for 1st-order optimality have been studied sufficiently, in this article the authors investigate the possibility of expanding the principle of the maximum to common discrete systems. In so doing, they first formulate the problem and give a formula for the increase in the functional of quality. They then cite the necessary conditions of optimality for nondegenerate systems, divided into a description of the local principle of the maximum and the differential principle of the maximum. Theorems are used to discuss the problem, and the first three sections of the article are generalized through examples. The authors finally discuss the principle of the maximum for degenerate systems, divided into degenerate linear systems and degenerate nonlinear systems. They also

1/2

- 4 -

USSR

GABASOV, R. and GUSAKOVA, M. L., *Differentsial'nyye Uraneniya*, Vol 7, No 9, Sep 71, pp 1581-1590

use theorems for proof of their arguments. The article contains 5 bibliographic entries.

2/2

USSR

UDC 621.383.292

AYNBUND, M. R., GUSAKOVA, N. G., KOZHINSKAYA, E. V., SEMENOVA, V. B.

"Production Technology and Linearity of the Characteristics of Miniature Channel Emitters"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektronoluch. i fotoelektr. pribory (Electronic Technology. Scientific-Technical Collection. Electron Beam and Photoelectric Devices), 1970, Issue 2(16), pp 11-15 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A194)

Translation: The paper describes an improvement of the production technology for spiral channel emitters of lead glass. The production process consists of winding of the spirals in an electrical furnace, orientation of the spiral ends on an axial line, polishing of the ends of the capillaries, frosting, washing, annealing in hydrogen, and deposition of the conductive contacts. The technology developed makes it possible to increase the output of suitable channels with an internal diameter of 1 mm (with an amplification  $> 10^5$ ) from 20 to 40 percent. The magnitudes of the channel resistances, and the permissible power dissipation are presented, and also the dependence of the output channels on the input, linear to  $10^{-8} - 10^{-6}$  amp. 5 ill. 6 ref. N. S.

1/1

an -

USSR

UDC 575.2:576.895.421

GUSALOVA, N. G., Military Medical Academy imeni S. M. Kirov and Institute of Zoology and Parasitology imeni Academician Ye. N. Pavlovskiy, Academy of Sciences Tadzhik SSR

"Variability of the Morphological Properties of *Hyalomma scupense* P. Sch. 1918 and *Hyalomma detritum* P. Sch. 1919 Ticks and Its Significance for Taxonomy"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 15, No 3, 1972, pp 69-72

Abstract: Morphological studies conducted to determine whether *H. detritum* and *H. scupense* represent two different species or just one species with seasonal variations yielded the following data. On the average, the body of male *H. detritum* is 0.2 mm longer than that of male *H. scupense*. The females are equally long, but *H. scupense* is 0.2 mm wider than *H. detritum*. The length of the peritreme process and the size of the subanal thorax vary in male *H. scupense* but are fairly constant in male *H. detritum*. Some female *H. detritum* have longitudinal wrinkles on the dorsal thorax. Males of both species have dots on the dorsal thorax. Conclusions will be drawn after completion of cross-mating experiments.

1/1

USSR

UDC 541 (15 + 64)

GUSAKOVSKAYA I. G., Institute of Chemical Physics, Academy of Sciences USSR

"Radiation Liquid Phase Polymerization of Butanediol dimethylmetacryllate"

Moscow, Khimiya Vysokikh Energiy, Vol 7, No 4, Jul-Aug 73, pp 354-357

Abstract: A detailed analysis has been carried out on some aspects of radiation liquid phase polymerization of butanediol dimethylmetacryllate (BM). The investigation has shown that the photo- and chemically induced radiation polymerization adheres to general regulations. During polymerization of the monomer at lower temperature in liquid phase, anomalies are observed which can be explained on the basis of molecular association.

1/1

USSR

UDC 597.0/5-15

PROTASOV, V. P., NEPROSHIN, A. YU., ~~GUSAR, A. G.~~, and KUPRIYANOV, V. S.,  
Institute of Animal Evolutionary Morphology and Ecology, imeni A. N. Severtsov,  
Moscow, and Azov-Black Sea Scientific Research Institute of Marine Fisheries  
and Oceanography, Kerch'

"Sounds Emitted by the Anchovy (*Engraulis encrasicolus* L.) in a Light Field"

Moscow, Voprosy Ikhtiologii, Vol 12, Vyp 2(73), 1972, pp 394-396

Abstract: Apparently fish within a light field emit sounds that attract other fish outside the light field. This reaction was tested in 17 experiments with anchovies on the Black Sea in March 1970 using television, underwater photography, sound recording, and oscillographic analysis. Before light was introduced the fish emitted rare high-frequency crackling sounds and a low-frequency persistent drumming that was attributed to other fish species. When a submerged lamp was switched on the fish congregated about it, emitting sounds of higher frequency at a significantly greater rate. These results were confirmed with those of laboratory tank experiments with *Leucaspius delineatus* Heck. When lights were turned on after 3 minutes of darkness the acoustic activity of the fish increased noticeably. These significant differences in acoustic activity in the absence and presence of light should be studied in their application to fish attraction methods.

1/1

- 6 -

1/2 038 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--OPERATION AND MAINTENANCE OF MAZOUT EQUIPMENT IN THERMAL POWER  
STATIONS -U-  
AUTHOR--GUSAR, F.G.  
COUNTRY OF INFO--USSR  
SOURCE--ELEKT. STANTSII (USSR), VOL. 41, NO. 3, P. 70-2 (1970)  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE), PROPULSION AND FUELS  
TOPIC TAGS--THERMOELECTRIC POWER PLANT, TEMPERATURE MEASUREMENT,  
COMBUSTION EFFICIENCY, FUEL COMBUSTION  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0503 STEP NO--UR/0104/70/041/003/0070/0072  
CIRC ACCESSION NO--AP0135966  
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135966

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF MEASUREMENTS WAS CARRIED OUT DURING OPERATION AND MAINTENANCE IN ORDER TO IMPROVE THE EQUIPMENT FOR THE BURNING OF MAZOUT IN A THERMAL POWER STATION. THE MEASUREMENTS WERE DIRECTED TO INCREASING THE RELIABILITY AND SIMPLIFICATION OF MAINTENANCE AND REPAIR OF THE PLANT. A SERIES OF MEASUREMENTS IS PROPOSED FOR THE APPRECIABLE REDUCTION OF LOSSES OF HEAT AND ELECTRICAL ENERGY IN THE PREPARATION AND COMBUSTION OF MAZOUT.

UNCLASSIFIED



USSR

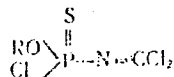
UDC 547.26

IVANOVA, ZH. M., GUSAR', N. I., MIROSHICHENKO, V. V., SAMARAY, L. I.,  
Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR

"A Method of Making Triphosphoric Acid Isocyanide Dichlorides"

Moscow, Otrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye  
Znaki, No 15, Apr 73, Author's Certificate No 374321, Division C, filed 25  
Jun 71, published 20 Mar 73, p 52

Translation: This Author's Certificate introduces: 1. A method of making  
triphosphoric acid isocyanide dichlorides of the general formula



where R is an alkyl. As a distinguishing feature of the patent, an alkyl  
dichlorophosphite is reacted with N-chlorosulphenyl isocyanide dichloride with  
subsequent isolation of the goal product by conventional methods. 2. A  
modification of this metod distinguished by the fact that the alkyl dichloro-  
phosphite and N-chlorosulfenyl isocyanide dichloride are taken in a molar  
ratio of 2:1. 3. A modification of this method distinguished by the fact  
that the process is done at 40-50°C.

1/1

- 22 -

USSR

UDC 546.183.2

IVANOVA, ZH. M., GUSAR', N. I., MIROSHNICHENKO, V. V., and GOLOBOV, Yu. G.,  
Institute of Organic Chemistry, Academy of Sciences, UkrSSR

"Reaction of Dialkylaminosulfenyl Chlorides With Alkyl Difluorophosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, p 2115

Abstract: Diethylaminosulfenyl chloride reacts with two equivalents of ethyl difluorophosphite yielding ethyl difluorothiophosphate, b.p. 78-79°,  $d_4^{20}$  1.2293,  $n_D^{20}$  1.3755, and diethyl amidodifluorophosphate b. p. 44-45°/12 mm,  $d_4^{20}$  1.1470,  $n_D^{20}$  1.3730. The starting ethyl difluorophosphite was obtained by fluorination of ethyl dichlorophosphite with antimonytrifluoride, b.p. 23-24°,  $d_4^{15}$  1.0922,  $n_D^{15}$  1.3280.

1/1

USSR

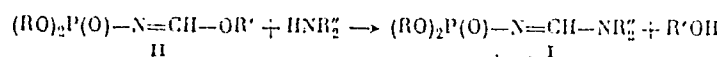
UDC 546.185

GUSAR', N. I., IVANOVA, Zh. M., KUKHAR', V. P., and KIRSANOV, A. V.,  
Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

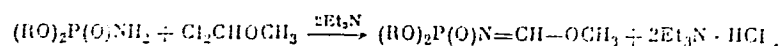
"N,N-Dialkyl-N'-Dialkoxyphosphonylformamidines"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2107-2108

Abstract: N,N-Dialkyl-N'-dialkoxyphosphonylformamidines are readily  
obtained by treating N-dialkoxyphosphonyliminoformic acid esters with  
secondary amines at 0-5°C without a solvent



N-dialkoxyphosphonyliminoformic acid methyl ester (II, R'=CH<sub>3</sub>) was obtained  
in low yield from the 1,1-dichloromethyl ester and dialkylamidophosphate,  
in the presence of triethylamine in benzene



1/1

- 58 -

USSR

UDC 62-251-755:534.1

GUSAROV, A. A.

"Selection of a System of Balancing Loads for a Flexible Rotor"

Moscow, Dinamika Gibk. Rotorov -- Sbornik (The Dynamics of Flexible Rotors -- Collection of Works), Nauka, 1972, pp 65-73 (from Referativnyy Zhurnal -- Turbostroyeniye, No 1, 1973, Abstract No 149.109)

Translation: A rigid rotor can be balanced by an arbitrary system of loads, if these loads are selected in such a manner that the sum of their static moments and the disbalance are equal to zero. The attained balance is not disturbed with a change of speed. For flexible rotors this condition is a flexible one, but is not sufficient. The initial disturbance and the system of balancing loads bring about various deflections of the rotor, the relationships among which change with the rate of rotation. Therefore the balance of a flexible rotor, attained at the balancing speed, can be intrinsically disturbed at a different speed if the system of balancing loads has been inaptly selected. The possibility is demonstrated of using the value of the ratio of reactions at two speeds for selecting the type and position of the system of balanced loads, at which the equilibrium of a flexible rotor, attained on the basis of the first form, will not be intrinsically disturbed within a range up to the second critical speed. 2 figures, 8 references.

1/1

1/2 033 UNCLASSIFIED PROCESSING DATE--19SEP70  
TITLE--POTASSIUM AND CESIUM HYDROXIDES STUDIED BY AN ELECTRON IMPACT  
METHOD. ENERGIES OF DISSOCIATION OF POTASSIUM HYDROXIDE AND CESIUM  
AUTHOR--(03)-GOROKHOV, L.N., GUSAROV, A.V., PANCHENKOV, I.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1) 269-70

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MASS SPECTRUM, ELECTRON BOMBARDMENT, THERMAL EFFECT,  
IONIZATION POTENTIAL, HEAT OF DISSOCIATION, CESIUM COMPOUND, POTASSIUM  
COMPOUND, HYDROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1983/0306

STEP NO--UR/0076/70/044/001/0269/0270

CIRC ACCESSION NO--AP0053291

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053291

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE MASS SPECTROMETRIC ELECTRON IMPACT METHOD WAS USED TO REFINE THE DISSOCN. ENERGIES OF KOH AND CSOH. THRESHOLD POTENTIALS LEADING TO IONS FROM THE REACTIONS K YIELDS K PRIME POSITIVE, KOH YIELDS K PRIME POSITIVE, KOH YIELDS KOH PRIME POSITIVE, K SUB2 (OH) SUB2 YIELDS K SUB2 OH PRIME POSITIVE, K SUB2(OH SUB2) YIELDS K SUB2 O PRIME POSITIVE, CSOH YIELDS CS PRIME POSITIVE, AND CSOH YIELDS CSOH PRIME POSITIVE WERE 4.3, 7.8, 7.5, 7.8, 7.6, 7.6, AND 7.4 EV, RESP. THE DISSOCN. ENERGIES OF KOH AND CSOH WERE 80 AND 86 KCAL-MOLE, RESP. THE DIFFERENCE BETWEEN THOSE 2 VALUES WAS ALSO CONFIRMED BY MEASUREMENT OF THE EQUIL. CONST. FOR THE REACTION CS PLUS KOH YIELDS K PLUS CSOH AT 795-1044DEGREES; A VALUE OF 7.6 KCAL-MOLE WAS OBTAINED. THE IONIZATION POTENTIAL OF K SUB2 O IS 4.6 EV AND THE TEMP. OF ATOMIZATION OF CS SUB2 O IS 130 KCAL-MOLE.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--VINYL ETHERS OF HALOALCOHOL. IV. GENERAL METHOD FOR SYNTHESIZING  
MONCHALCALCOXYETHYLENES -U-

AUTHOR--SHOSTAKOVSKIY, M.F., ATAVIN, A.S., TROFIMOV, B.A., GUSAROV, A.V.,  
NIKITIN, V.Y.

COUNTRY OF INFO--USSR

SOURCE--Zh. Obshch. Khim. 1970, 40(1), 70-77

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HALOGENATED ORGANIC COMPOUND, ETHYLENE, ORGANIC PHOSPHORUS  
COMPOUND, GLYCOL, HETEROCYCLIC OXYGEN COMPOUND, CHEMICAL SYNTHESIS,  
FLUORINATED ORGANIC COMPOUND, BROMINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY PEEL/FRAPE--1980/1342

STEP NO--UR/0079/70/040/001/0070/0077

CIRC ACCESSION NO--AP0049502

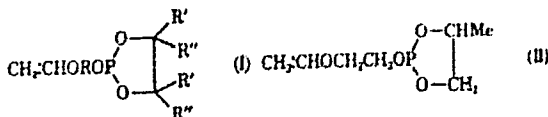
UNCLASSIFIED

Acc. Nr: **AP0049502** Abstracting Service:  
CHEMICAL ABST. 5/70

Ref. Code:  
**4R 0079**

99938h Vinyl ethers of haloalcohols. IV. General method for synthesizing monohaloalkoxyethylenes. Shostakovskii, M. F.; Atavin, A. S.; Trofimov, B. A.; Gusarov, A. V.; Nikitin, V. M.; Skorobogatova, V. I. (Irkutsk. Inst. Org. Khim., Irkutsk, USSR). Zh. Obshch. Khim. 1970, 40(1), 70-7 (Russ).

A synthesis of (haloalkoxy)ethylenes was developed from the Arbuzov rearrangement of vinyloxyalkyl glycol phosphites. Heating 100 g (CH<sub>2</sub>)<sub>6</sub>(OH)<sub>2</sub> and 10 g KOH under 70 ml tetrahydrofuran in an autoclave 4 hr at 120° gave 54% H<sub>2</sub>C:CHO-(CH<sub>2</sub>)<sub>6</sub>OH, b<sub>15</sub> 95°, d<sub>20</sub> 0.8926, n<sub>D</sub><sup>20</sup> 1.4460. Treating 0.228 mole vinyl glycol ether in 0.3 mole pyridine and 200 ml Et<sub>2</sub>O with 0.228 mole phosphorochloridite of a glycol at 15-20° gave, after removal of C<sub>3</sub>H<sub>7</sub>N.HCl, (I) (R, R', and R" given): (CH<sub>2</sub>)<sub>2</sub>, H,



1/3

REEL/FRA  
19801342

7



AP0049502

Me,  $b_1$  96.5°,  $d_n$  1.1090,  $n_D^{20}$  1.4615;  $(CH_3)_2$ , H, Me,  $b_2$  86-7°, 1.0730, 1.4580;  $(CH_2)_4$ , H, Me,  $b_{12}$  105°, 1.0599, 1.4583;  $(CH_2)_6$ , H, Me,  $b_2$  135°, 1.0340, 1.4605;  $(CH_2)_8$ , Me, Me,  $b_1$  87°, 1.0500, 1.4572;  $(CH_2)_4$ , Me, Me,  $b_1$  105-8°, 1.0391, 1.4595;  $(CH_2)_2$ -CHMe, H, Me,  $b_1$  90-5°, 1.0511, 1.4520;  $(CH_2)_2O(CH_2)_2$ , H, Me,  $b_7$  145°, 1.1106, 1.4645;  $(CH_2)_2$ , H, H,  $b_8$  93°, 1.1795, 1.4710; II,  $b_1$  65°, 1.1334, 1.4614. These with 5 moles alkyl halide heated in a sealed tube at 90-150° several hr gave 20-85%  $H_2C:CHORX$  (R and X shown):  $(CH_2)_2$ , F,  $b_1$  79°, 0.9745, 1.3860;  $(CH_2)_4$ , Cl,  $b_1$  106°, 1.0470, 1.4375;  $(CH_2)_6$ , Br,  $b_{31}$  50°, 1.4051, 1.4710;  $CH_2CH_2$ , I,  $b_{37}$  71°, 1.7585, 1.5263;  $(CH_2)_4$ , F,  $b_1$  95-8°, 0.9534, 1.4003;  $(CH_2)_6$ , Cl,  $b_{13}$  52-3°, 1.0273, 1.4375;  $(CH_2)_8$ , Br,  $b_{25}$  55°, 1.3484, 1.4705;  $(CH_2)_4$ , I,  $b_9$  54-5°, 1.6368, 1.5193;  $(CH_2)_6$ , Cl,  $b_{17}$  61-5°, 0.9965, 1.4458;  $(CH_2)_8$ , Br,  $b_{28}$  72-3°, 1.2860, 1.4710;  $(CH_2)_4$ , I,  $b_8$  70-1.5°, 1.5471, 1.5158;  $(CH_2)_6$ , Cl,  $b_{12}$  84-6°, 0.9718, 1.4478;  $(CH_2)_8$ , Br,  $b_1$  51-5°, 1.2049, 1.4708;  $(CH_2)_6$ , I,  $b_1$  84-5°, 1.3947, 1.5015;  $(CH_2)_2CHMe$ , Br,  $b_{30}$  76-8°, 1.2671, 1.4650;  $(CH_2)_2CHMe$ , I,  $b_7$  62-4°, 1.5056, 1.5080;  $(CH_2)_2O(CH_2)_2$ , Cl,  $b_9$  69-71°, 1.1040,

2/3

19861343

AP0049502

1.4535;  $(\text{CH}_2)_2\text{O}(\text{CH}_2)_4$ , Br, b, 73-5°, 1.3564, 1.4750;  $(\text{CH}_2)_2\text{O}(\text{CH}_2)_4$ , I, b, 58-9°, 1.5893, 1.5139. Exchange of the iodo members with KF gave the fluoro analogs:  $(\text{CH}_2)_4$ , F, described above;  $(\text{CH}_2)_6$ , F, described above;  $(\text{CH}_2)_8$ , F, b, 115-20°, 0.9272, 1.4045. Rearrangement of I [R =  $(\text{CH}_2)_4$ , R' = R'' = H] with  $\text{H}_2\text{C}:\text{CHCH}_2\text{Br}$  resulted in ring opening only and gave  $\text{H}_2\text{C}:\text{CHCH}_2\text{P}(\text{O})(\text{OCH}_2\text{CH}_2\text{Br})\text{O}(\text{CH}_2)_4\text{OCH}:\text{CH}_2$  (III);  $(\text{PrO})_2\text{POCH}_2\text{CH}_2\text{OCH}:\text{CH}_2$  and EtI similarly gave only the open-chain  $\text{H}_2\text{C}:\text{CHO}(\text{CH}_2)_4\text{OP}(\text{O})(\text{Et})\text{OPr}$ , b, 87-9°, 1.0476, 1.4417. III, b, 144-5°, 1.3630, 1.4890, was obtained above in 67% yield. Reaction of 2 moles chlorohydrin with 2 moles AcH and dry HCl at -5-0° gave the requisite chloro ethers, which with 2.2 mole  $\text{Et}_3\text{N}$  at this temp., then 5 hr at 80-90°, gave the (haloalkoxy)ethylenes  $\text{H}_2\text{C}:\text{CHORX}$  (R and X shown):  $(\text{CH}_2)_4$ , Cl;  $(\text{CH}_2)_6$ , Cl and  $(\text{CH}_2)_8$ , Br and  $(\text{CH}_2)_4$ , Cl, described above. Triethylene glycol and Br with red P gave  $(\text{BrCH}_2\text{CH}_2\text{OCH}_2)_3$ , b, 103-5°, 1.6638, 1.5010, which with powd. KOH in a Cu vessel at 95-110° in partial vacuo gave 18.5%  $\text{H}_2\text{C}:\text{CHO}(\text{CH}_2)_2\text{O}(\text{CH}_2)_2\text{Br}$ , described above. G. M. Kosolapoff

2/3

19801344

PC

Acc. Nr:

AP0053454

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

4R0366

110704b Vinyl ethers of halo alcohols. V. Synthesis of new functional alkoxyethylenes by nucleophilic substitution of the halogen. Atavin, A. S.; Gusarov, A. V.; Trofimov, B. A.; Shamarina, N. V. (Irkutsk. Inst. Org. Khim., Irkutsk, USSR). *Zh. Org. Khim.* 1970, 6(2), 228-32 (Russ). The reaction of  $\text{H}_2\text{C}:\text{CHO}(\text{CH}_2)_n\text{X}$  (I) (X is Cl or Br) with KSCN gave 47-65%  $\text{H}_2\text{C}:\text{CHO}(\text{CH}_2)_n\text{SCN}$  (n is 2, 3, or 4). Similarly, I reacted with  $\text{AcCH}_2\text{CO}_2\text{Et}$  to give 32.5 and 48.0%  $\text{H}_2\text{C}:\text{CHO}(\text{CH}_2)_n\text{CHAcCO}_2\text{Et}$  (n is, resp., 2 or 4). The reaction of I with  $\text{Et}_2\text{NC}(\text{S})\text{SK}$  gave the previously unknown  $\text{H}_2\text{C}:\text{CHO}(\text{CH}_2)_n\text{SC}(\text{S})\text{NEt}_2$  (n is 2 or 4). NaCN with I gave  $\text{H}_2\text{C}:\text{CHO}(\text{CH}_2)_n\text{CN}$  (n is 3 or 4) and  $\text{Na}_2\text{S}_2$  with I gave  $[\text{H}_2\text{C}:\text{CHO}(\text{CH}_2)_n\text{S}]_2$ . CPJR

REEL/FRAME  
19830479

USSR

UDC 621.315.592:546.28

GUSAROV, G. F.

"Production of Thin Films of Semiconductor Crystals for Electron Microscopic Study by Transillumination"

Zavodsk. laboratoriya (Plant Laboratory), 1971, 37, No 5, pp 566-567 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10887)

Translation: The initial wafers 100-300 micrometers thick and  $4 \times 4 \text{ mm}^2$  in area placed in a fluoroplastic cassette are prepared in such a manner that only the central part of the 1.5-2 mm diameter wafer is subjected to chemical polishing. Chemical polishing is accomplished in a jet etching arrangement which differs in that the reagent jet does not fall on the specimen but in a vessel with the etchant. With such a method of etching, the bottom of the aperture being etched is made flat. The method described was tested on Si, Ge, GaAs. Etchants of the composition HF:  $\text{HNO}_3 = 1:5:1:7$  gave good results for Si. With 5-10 min of etching the output of specimens with a field of  $0.3-1 \text{ mm}^2$ , transparent for electrons, amounted to 70-80 percent. In order to obtain Ge films, the solutions obtained for Si were used with the addition of 1-2 parts by volume of  $\text{CH}_3 \text{COOH}$ . Polishing of GaAs was in etchants consisting of  $\text{H}_2\text{O}_2$ ,  $\text{H}_2\text{SO}_4$  and  $\text{H}_2\text{O}$  in the ratio 2:3:1. With 40-60 min of 1/2

USSR

GUSAROV, G. F., Zavodsk. laboratoriya (Plant Laboratory), 1971, 37, No 5, pp 566-567 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B87)

etching the output of specimens suitable for scanning in an electron microscope amounted to 60-70 percent. N. Sh.

2/2

- 194 -

1/2 . 021

UNCLASSIFIED

PROCESSING DATE--09OCT70/

TITLE--HEMODYNAMICS OF THE MINOR CIRCULATORY CIRCUIT IN PATIENTS WITH  
ACUTE PULMONARY ABSCESSSES TREATED BY A METHOD OF REGIONAL INFUSION OF  
AUTHOR--(05)--UGLOV, F.G., SMIRNOV, A.D., DANILOV, L.N., YEGIAZARYAN, V.P.,  
GUSAROV, G.V.  
COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP  
13-17  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMODYNAMICS, RESPIRATORY SYSTEM DISEASE, LUNG, ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1990/1023

STEP NO--UR/0589/70/104/005/0013/0017

CIRC ACCESSION NO--AP0109174

UNCLASSIFIED

2/2 · 021

UNCLASSIFIED

PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0109174

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEMODYNAMIC CHANGES IN THE MINOR CIRCULATORY CIRCUIT IN PATIENTS WITH PULMONARY ABSCESSSES TREATED BY A METHOD OF REGIONAL INFUSION OF ANTIBIOTICS IN THE PULMONARY ARTERY TRUNK OR ITS CORRESPONDING BRANCH HAVE BEEN STUDIED, USING A METHOD OF THERMODILUTION. TOWARD THE END OF TREATMENT MINUTE VOLUME IN THE RIGHT VENTRICLE RETURNED TO VALUES COMMON FOR SUCH PATIENTS. WHILE OTHER HEMODYNAMIC INDICES IN THE MINOR CIRCULATORY CIRCUIT TO THE LAST DAY OF THERAPY USING THIS METHOD ALSO REDUCED OR SHOWED A TENDENCY TO NORMALIZATION. THE MENTIONED CHANGES IN HEMODYNAMIC INDICES CORRESPONDED TO CONSIDERABLE IMPROVEMENT OR COMPLETE ABORTION OF THE LOCAL PROCESS. FACILITY: VSESOUZNOGO N-I INSTITUTA PUL'MONOLOGII MINISTERSTVA ZDRAVJOKHRANENIYA SSSR.

UNCLASSIFIED

USSR

UDC 621.65/.68.621.3.078.

SMEL'NITSKIY, S. G., Candidate of Technical Sciences, BULKIN, A. Ye., Candidate of Technical Sciences, PAKOV, V. I., Candidate of Technical Sciences, Gusarov, O. P., Engineer, and TYUGAYEV, V. A., Engineer, Moscow Power Engineering Institute, Heat and Electric Power Plant-22, Moscow Regional Administration of Power System Management

"Electric Automatic Control and Protection System of OVPT-500-Type Turbopump Feeder Unit"

Moscow, Teploenergetika, No 6, Jun 73, pp 33-36

Abstract: A new electric system of automatic control and protection with complete elimination of hydraulic members was installed on the turbopump feeder unit No1, OVPT-500 type, of the Heat and Electric Power Plant-22 of Moscow Regional Administration of Power System Management. The system is mainly based on typical automation means used in technological processes in electric power plants. The working of the system is discussed by reference to its functional circuit, the diagram of control mechanism, and the power supply diagram of electromagnets of friction drives. The described system considerably simplified the operating conditions of the turbopump feeder unit, in particular its remote control. Five figures, four bibliographic references.

1/1

- 145 -



Miscellaneous

USSR

UDC 669.782.018.9(088.8)

GUSAROV, V. N., MIKULINSKIY, A. S., RYSS, M. A., GETMANCHUK, V. M.  
PIGASOV, S. Ye., BELYAYEV, G. S., BEDOV, I. S., and POMOVGAYEV, V. N.

"Method of Melting Calcium-Silicon"

USSR Author's Certificate No. 26515, Filed 22/04/67, Published 17/06/70,  
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract  
No.1 G164 P).

Translation: A method is suggested for producing Ca-Si in an electric arc furnace by reducing CaO with Si-containing material in the presence of  $\text{CaF}_2$  with creation of a reducing atmosphere in the furnace by adding a C-containing material to the fused charge during the period of Ca reduction. The charge is fused in the presence of the C-containing material in order to increase the content of Ca in the melt, while the Si-containing reducer is introduced after melting.

1/1

Gusarova, A.N. Oceanography - Atlantic Photosyn.  
JPRS 56398  
30 June 1972 Layer.

Rate of Chemical Processes in Tropical Atlantic Photosynthesis Layer

This paper gives a quantitative estimate of the rate of production and biochemical consumption of oxygen, the rate of assimilation and regeneration of the principal biogenous elements in the photosynthesis layer, and also the rate of the photosynthesis process in summer in the Atlantic Ocean at 16.5°N at 32-33°W. This estimate is given on the basis of use of data on the variability in situ of the content of oxygen, nitrates and silicic acid at two stations occupied for three days. It was found that half the primary production is created in the lower part of the photosynthesis layer. This picture is characteristic not only for the investigated area, but also for the entire tropical zone of all the oceans. The quantity of diurnal primary production under a unit area in summer for the particular region was four times greater than indicated in the literature. Accordingly, there was also a greater rate of production and consumption of oxygen, assimilation and regeneration of the principal biogenous elements. In the photosynthesis layer in the tropics the daily consumption in oxygen and regeneration of nitrogen and phosphorus compounds is 90-95 percent of the diurnal oxygen production and the consumption of nitrates and phosphates. (Abstract: "Rate of Chemical Processes in the Photosynthesis Layer in the Tropical Atlantic," by V. N. Ivanenkov, V. V. Sazonnikov, A. M. Chernyakova and A. N. Gusarova, Institute of Oceanology, Moscow, *Okeanologiya*, Vol. XII, No. 2, 1972, pp. 243-250)

-23-

1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--RESPIRATION AND DEHYDROGENASE ACTIVITY OF CANDIDA TROPICALIS IN THE  
PRESENCE OF FURFURAL -U-  
AUTHOR-(02)-GUSAROVA, L.A., VITRINSKAYA, A.M.  
COUNTRY OF INFO--USSR  
SOURCE--PRIKL. BIOKHM. MIKROBIOL. 1970, 6(2), 161-7  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--YEAST, CONTINUOUS CULTURE, FURFURAL, INHIBITION,  
DEHYDROGENASE, TOXICITY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605001/E05 STEP NO--UR/0411/70/006/002/0161/0167  
CIRC ACCESSION NO--AP0139371

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139371

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FURFURAL (I) AT A CONCN. OF 0.1PERCENT DEPRESSES O SUB2 CONSUMPTION BY 20-30PERCENT AND PARTIALLY INHIBITS PYRUVIC, OXALACETIC, AND ESP., SUCCINIC AND MALIC DEHYDROGENASES OF C. TROPICALIS CULTIVATED IN RIEDER'S MEDIUM. THE ACTIVITY OF ALPHA-KETOGLUTARATE DEHYDROGENASE IS INCREASED IN THE PRESENCE OF I. THE TOXIC EFFECT OF THIS ADDITIVE IS MORE PRONOUNCED WHEN IT IS ADDED TO THE CULTURE MEDIUM AT THE BEGINNING OF THE LOG PHASE RATHER THAN DURING THE LAG PHASE. THUS, THE PRESENCE OF I IN SANDUST HYDROLYZATES USED AS A NUTRIENT FOR C. TROPICALIS IS HARMFUL TO THE MICROORGANISM. FACILITY: ALL UNION RES. INST. PLANT MATER., LENINGRAD, USSR.

UNCLASSIFIED

1/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EFFECT OF SYNTHETIC FATTY ACID COMPOSITION ON THE PROPERTIES AND  
STRUCTURE OF LITHIUM LUBRICANTS -U-

AUTHOR--(04)-GUSAROVA, M.S., VAYNSHTOK, V.V., KARAKASH, S.I., KARTININ,  
B.N.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (3), 12-14

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FATTY ACID, ORGANOLITHIUM COMPOUND, GREASE, FLUID VISCOSITY,  
UREA, CHEMICAL STABILITY/(U)AU SPINDLE OIL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1517

STEP NO--UR/0318/70/000/003/0012/0014

CIRC ACCESSION NO--AP0118504

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118504

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUBSTITUTION OF LI SOAPS OF THE N- AND ISOALKANOIC ACIDS IN A C SUB17-20 FATTY ACID FRACTION FOR LI SOAPS OF THE ORIGINAL FRACTION IMPROVED AND WORSENEO, RESP., THE CONSISTENCY OF LUBRICANTS PREPD. BY DISPERSING 9PERCENT OF THE SOAP IN AU SPINDLE OIL AS INDICATED IN THEIR RESP. DROP POINTS, 200 AND 130DEGREES; COLLOIDAL STABILITIES, 10.4 AND 13PERCENT; YIELD STRENGTHS, 14, 21.6, 55.6 AND 2.1, 7.8, 32.3 AT 50, 0, AND MINUS 40DEGREES; AND EFFECTIVE VISCOSITIES, 8.2, 37.6, 110, 122, 626, 1500 AND 4, 17.2, 46.6, 79, 234, 218 P AT 1260, 50, AND 10 SEC PRIME NEGATIVE1 AT 0DEGREES AND AT THE SAME SHEAR VALUES AT MINUS 40DEGREES, RESP. WHEN THE ISOALKANOIC ACIDS WERE SEPD. BY EXTN. WITH SELECTIVE SOLVENTS RATHER THAN BY COMPLEX FORMATION WITH UREA, REMOVAL OF UNSAPONIFIABLE COMPOS. ALSO IMPROVED LUBRICANT QUALITY AND STABILITY. REMOVAL OF THE DICARBOXYLIC ACIDS PRESENT (2.8PERCENT) IN A C SUB10-16 FATTY ACID FRACTION BEFORE PREPN. OF THE LI SOAPS AFFECTED THE LUBRICANT PROPERTIES VERY LITTLE. LI SOAPS PREPD. FROM THE FORMER DISPERSED TOO POORLY FOR LUBRICANT PREPN. FACILITY: MIN-KHOP IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EFFECT OF THE COMPOSITION OF THE DISPERSION MEDIUM ON THE  
PROPERTIES OF LUBRICANTS THICKENED WITH LITHIUM SOAPS OF SYNTHETIC FATTY  
AUTHOR--(03)-GUSAROVA, M.S., VAYNSHTOK, V.V., CHERNOZHUKOV, N.T.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 43

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FATTY ACID, GREASE, CHEMICAL COMPOSITION, ORGANOLITHIUM  
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1513

STEP NO--UR/0318/70/000/002/0043/0043

CIRC ACCESSION NO--AP0118500

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--23JCT70

CIRC ACCESSION NO--AP0118500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISPERSION MEDIA WERE NAPHTHENIC AROMATIC AND PARAFFINIC SPINDLE OILS, THE SAME OILS DEAROMATIZED WITH OLEUM, AND HIGH VISCOSITY NAPHTHENIC PARAFFINIC OILS, USING 9PERCENT LI SOAPS OF C SUB10-12, C SUB12-14, C SUB14-16, AND C SUB17-19 FATTY ACIDS AS THICKENING AGENT. A SATISFACTORY GREASE WAS OBTAINED WITH NAPHTHENIC PARAFFINIC SPINDLE OIL ONLY WHEN THE LATTER WAS THICKENED WITH SOAP OF C SUB14-16 FATTY ACIDS. THE SOAPS OF ALL ACID FRACTIONS HAD LOW THICKENING EFFECTS IN HIGH VISCOSITY OILS. ADEQUATE LI GREASES WERE OBTAINED WHEN AROMATIZED OILS OR DISTILLATES WERE THICKENED WITH THE NARROW FRACTION OF FATTY ACID WHICH HAD THE OPTIMUM THICKENING EFFECT. FACILITY: MINKHGP IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED



USSR

UDC 669.215.089.68:543.42

GUSARSKIY, V. Y., FRIEDMAN, G. I., and TIMOFEEYEVA, I. N.

"Principles for the Synthesis of the Composition of Standard Specimens for the Spectral Analysis of Aluminum Base Alloys"

V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp. 1" [In the Collection "Seventh Ural Conference on Spectroscopy, 1971. No 1"], Sverdlovsk, 1971, pp 84-86 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.996 by V. S. K.)

Translation: The requirements are listed which have to be considered in projecting the compositions of standard specimens for spectral analysis: correspondence of real alloys by chemical composition, presence of the interval of concentrations beyond the scope of the All-Union State Standard of the actual alloy, stability of the sum of concentrations of the alloy components in all specimens of the complex, provision of the control of the maximum quantity of brands of alloys by means of the minimum number of types of standard specimens. Projecting the chemical composition of different standard specimens requires that the accompanying admixtures, which are not provided by the All-Union State Standard for the given series of alloys, also be considered. The composition is given of the 69 complex of the  
1/2

USSR

GUSARSKIY, V. V., et al., V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp. 1" pp 84-86 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.996 by V. S. K.)

standard specimen for spectral analysis of alloys of types D-20, AK-6, V-65, and D-18. The unique graduation graph for the determination of manganese is presented. Each point on graduation graphs represents the average of 10 parallel determinations. The investigation of prepared standard specimens has demonstrated the rightfulness of the "group" method of grouping standards for aluminum alloys. The standard specimens of the 69 complex and of the alloy Duralumin show for their analysis in all elements unique graduation graphs. One illustration, one table.

2/2

- 143 -

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SYNTHESIS AND PYROLYSIS OF CYCLOBUTYLMETHYL TRIMETHYLSILANE -U-  
AUTHOR--(05)-NAMETKIN, N.S., GUSELNIKOV, L.YE., USHAKAVA, R.L., STARTSEVA,  
O.M., VOOVIN, V.M.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 494-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL SYNTHESIS, PYROLYSIS, ORGANIC SILANE, PLATINUM  
COMPOUND, CATALYST  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0847 STEP NO--UR/0062/70/000/002/0494/0496  
CIRC ACCESSION NO--AP0119751  
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0119751  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 15.5 G METHYLENECYCLOBUTANE  
OVER 2 HR TO 23 G ME SUB2 SIHCl AND 0.2 ML H SUB2 PTCI SUB6 CATALYST IN  
THF, AND HEATING THE MIXT. 8 HR AT 110DEGREES GAVE 51PERCENT  
DIMETHYL(CYCLOBUTYLMETHYL) CHLOROSILANE, B. 167-8DEGREES, N PRIME20 SUBD  
1.4465, D PRIME20 0.9296. THIS WITH MEMGI GAVE 55.4PERCENT  
(CYCLOBUTYLMETHYL) TRIMETHYLSILANE, B. 145DEGREES, 1.4310, 0.7816.  
PYROLYSIS IN A STATIC SYSTEM AT 430DEGREES GAVE 51PERCENT CH SUB2:CHCH  
SUB2 SIME SUB3 IN 30 MIN. IN AN IMPULSE PYROLYSIS AT 575DEGREES WITH 12  
SEC CONTACT TIME, 61PERCENT CONVERSION WAS ATTAINED; THE AMT. OF SAMPLE  
DID NOT AFFECT THE CONVERSION, SHOWING THAT THE REACTION IS TRULY  
MONOMOL. AND FORMS THE ABOVE PRODUCT AND C SUB2 H SUB4.  
FACILITY: INST. NEFTEKHIM.SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 612.822.3

SERGEYEV, V. I. and GUSEL'NIKOV, V. I., Chair of Higher Nervous Activity,  
Moscow State University imeni M. V. Lomonsov

"A Multi-Channel Biotelemetry System for Transmitting the Bioelectrical  
Activity of the Brain"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23,  
Vyp 5, Sep/Oct 73, pp 1,088-1,092

Abstract: A multi-channel biotelemetry system capable of transmitting and reproducing cerebral electrical activity of rabbits, cats, dogs, turtles and birds is described. The system has the capacity for multi-channel transmission with frequency and amplitude modulation of from one to three signals, to a distance up to 70 m. The biotelemetric receiver, developed in the authors' laboratory, is a three-channel superheterodyne. Modular construction was used for the transmitter, including the biopotential amplifier, the subcarrier frequency generator and the high-frequency generator. The system has been tested on rabbits and cats.

1/1

USCR

UDC 612.84+615.787

KRUZHALOV, N. B., and GUSEL'NIKOVA, K. G., Chair of Physiology of Higher Nervous Activity and Laboratory of Physiology and Evaluation of Analysors, Moscow State University imeni M. V. Lomonosov

"The Effect of Certain Cholinolytics and Anticholinesterase of the Electro-olfactogram of the Frog"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 57, No 11, 1971, pp 1,740-1,742

Abstract: The hypothesis that the acetylcholine-cholinesterase system plays a role in olfactory reception was tested by the application of a number of cholinolytics and anticholinesterases to the olfactory epithelium of frogs. Of the three cholinolytics used -- atropine, diptacin, and hexonium -- only the latter had a significant inhibiting effect on the electroolfactogram, which shows the receptor potential of the olfactory cells. It was concluded that cholinolytics are capable of exciting the olfactory receptors, just as ordinary odoriferous substances do. Neither of the anticholinesterases used (eserine and proserine) caused an increase in either the amplitude or the length of the electroolfactogram. From this it may be concluded that anticholinesterase does not participate in the processes which precede the generation of the

1/2

USSR

KRUSHALOV, N. B., and GUZEL'NIKOVA, K. G., Fiziologicheskiy Zhurnal SSSR  
imeni I. M. sechenov, Vol 57, No 11, 1971, pp 1,740-1,742

electroolfactogram and, consequently, that acetylcholine is not a mediator in  
the process of olfactory reception.

2/2

- 71 -

USSR

UDC 539.3

GUSEV, A. P., and MOSKVITIN, G. V., Moscow

"Analysis of Some Approaches to the Description of Cyclic Strain Diagrams"

Moscow, Mashinovedeniye, No 4, Jul-Aug 73, pp 59-67

Abstract: An analysis is presented of a series of suggestions for the analytical description of cyclic strain diagrams. The advantages and deficiencies of the discussed approaches are demonstrated, the regularities of cyclic strain are investigated, and the application of the discussed approaches in solving problems of cyclic plasticity is indicated. The analysis of various expressions of cyclic elasto-plastic strain reveals that the presented analytical form of the generalized cyclic strain diagram and the generalized principle of G. Masing (in: Wissenschaftliche Veröffentlichungen aus dem Siemens-Konzern, 1924, 3; 1926, 5) reflect most correctly the peculiarities of the strength of materials at cyclic loads. Illustrated calculated and experimental data of a series of half-cycle loads are in good agreement. Six figures, one table, eleven formulas, eight bibliographic references.

1/1



USSR

UDC: 621.376.56:621.373.029.67

GUSEV, A. A., NIKITIN, V. V., SEMENOV, G. I., and BEASHIN, V. I.

"Switching Device Using an Injection Semiconductor Laser"

Moscow, Kvantovaya elektronika, No 7, 1972, pp 92-94

Abstract: Recently, successful use has been made of semiconductor lasers for rapid-operation optical logic elements. With the idea of using such lasers as a rapid switching device for multiplex telemetric systems, the authors of this brief communication have investigated such a laser switch, with special attention to its dynamic range and noise characteristics. The block diagram of the experimental equipment with which this investigation was conducted is built around two GaAs lasers, cooled to the temperature of liquid nitrogen, and silicon photodiodes. The lasers are fed by independent current pulse generators with signal amplitudes continuously variable from zero to 20 A, the injection current being measured. The laser radiation emerges from a plane-parallel window of the cryostat and is recorded by the photodiodes, the output of which is connected to an SI-15 oscillograph. By means of this equipment, curves of the output power of the lasers and the laser switching device as a function of the injection current were plotted. The authors conclude that the lasers can be used

1/2

USSR

UDC: 621.376.56:621.375.629.67

GUSEV, A. A. et al, Kvantovaya elektronika, No 7, 1972, pp 92-94

as ultra-rapid switching devices with a dynamic range of  $10^3$ - $10^4$ , especially since semiconductor lasers capable of operating at room temperature and above have recently been developed. The authors express their gratitude to V. D. Samoylov for his discussion of the experimental results, and to Yu. F. Zakharov and V. F. Litvinov for their assistance with the experiments.

2/2

- 100 -

Aluminum and Its Alloys

UDC 669.71.018.9.4

USSR

GOROKHOV, V. P., GUSEV, A. E., OSADCHIY, V. A., RYZHOV, I. V.,  
and ZHALNIN, I. A.

"Special Machine for Manufacture of Large -Area Power Switch-  
boards With a Considerable Number of Holes"

Rekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa (Technology  
of Light Alloys -- Scientific and Technical Bulletin of All-Union  
Institute of Light Alloys), 1970, No 5, pp 130-131 (from RZh-  
Metallurgiya, No 3, Mar 71, Abstract No 3 G166 by G. SVOYTSEVA)

Translation: A table-model special machine for the manufacture  
of perforated power switchboards used in the refining of aluminum  
alloys by the injection of nitrogen and argon has been manufac-  
tured and put into production. The machine makes possible the  
high-efficiency drilling of holes 0.3 to 0.5 mm in diameter in  
graphite, steel, and titanium up to 5 mm in thickness.

1/1

UDC 539.26

USSR

GUSEV, A. I., ALEKSANDROV, G. G., and STRUCHKOV, Yu. I., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Crystalline and Molecular Structure of Hydrido-Formiato-tris-(triphenylphosphine)ruthenium (II) -- (H)Ru(OOCH)(PPh<sub>3</sub>)<sub>3</sub>"

Moscow, Zhurnal Strukturnoy Khimii, Vol 14, No 4, Jul/Aug 73, pp 685-691

Abstract: The x-ray structural analysis was carried out of the complexes (H)Ru(OOCH)(PPh<sub>3</sub>)<sub>3</sub> which crystallized in monoclinic syngony  $a = 20.272$ ,  $b = 14.260$ ,  $c = 20.944$  Å,  $\beta = 122^\circ 46'$ ,  $Z = 4$ . The Ru atom exhibits a highly skewed octahedral coordination. The formate ligand is coordinated by two O atoms, one of which -- O (1) -- is located trans to the hydride H atom, which could not be identified by x-ray. The distance Ru-O(1) of 2.29 Å is greater than the distance Ru-O(2) of 2.23 Å to the second oxygen atom, trans located to the P (3) of the triphenylphosphine ligand. The distance Ru-P(3) of 2.274 Å in its turn is considerably smaller than the distance Ru-P(1) and Ru-P(2) 2.350 and 2.364 Å to the P atoms of the other two triphenylphosphine ligands in trans position to each other.

1/1

- 27 -

USSR

UDC 548.737

KALININ, A. YE., GUSEV, A. I., and STRUCHKOV, YU. T., Institute of Organo-  
elemental Compounds, Academy of Sciences USSR

"The Crystal and Molecular Structure of bis-(Dithioformate)-bis-(triphenylphos-  
phine)ruthenium (II)"

Moscow, Zhurnal Strukturnoy Khimii, Vol 14, No 5, Sep-Oct 73, pp 859-867

Abstract: An x-ray diffraction structural study of the complex  $\text{Ru}(\text{S}_2\text{CH})_2(\text{PPh}_3)_2$  was carried out. This complex crystallizes in the monoclinic system with  $a = 11.651$ ,  $b = 17.388$ ,  $c = 18.376 \text{ \AA}$ ;  $\beta = 114.47^\circ$ ,  $Z = 4$ , spatial group  $R 2_1/b$ . The coordination of Ru with the four S atoms of the  $\text{S}_2\text{CH}$  ligands and the two P atoms of the  $\text{PPh}_3$  ligands, which are located in a cis-position to each other, is of the distorted octahedral type. The  $\text{S}_2\text{CH}$  ligands form four-membered chelate rings with the Ru atoms. The lengths of the Ru-P bonds ( $2.344$  and  $2.336 \text{ \AA}$ ) coincide within the limits of the precision of measurements, while the Ru-S bonds in a trans-position to the P atoms ( $2.443$  and  $2.450 \text{ \AA}$ ) are significantly longer than those in a trans-position to each other ( $2.383$  and  $2.391 \text{ \AA}$ ). The compound studied was synthesized by T. S. Lobayevam I. S. Kolomnikov, and M. ye, Vol'pin at the Institute of Organoelemental Compounds by reacting  $\text{H}_2\text{Ru}(\text{PPh}_3)_4$  or  $\text{HRu}(\text{O}_2\text{CH})(\text{PPh}_3)_3$  with  $\text{CS}_2$ .

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--ISOLATION AND PURIFICATION OF EMBRYOSPECIFIC ALPHA GLOBULINS OF MAN  
AND ANIMALS USING PREPARATIVE DISC ELECTROPHORESIS ON POLYACRYLAMIDE GEL  
AUTHOR--(02)-GUSEV, A.I., YAZOVA, A.K.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(1), 172-81

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FETUS, BLOOD SERUM, ALPHA GLOBULIN, ELECTROPHORESIS,  
POLYACRYLAMIDE RESIN, GEL, ANTIGEN, TRANSFERRIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/0634

STEP NO--UR/0218/70/035/0017/0172/0181

CIRC ACCESSION NO--AP0117860

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 027

CIRC ACCESSION NO--AP0117860

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. FETAL SERUM WAS FRACTIONATED BY

DISC ELECTROPHORESIS ON POLYACRYLAMIDE GEL (B. Y. DAVIS, 1964). THE EMBRYO SPECIFIC ANTIGENS (ALPHA SUB1 GLOBULINS) WERE LOCATED IN THE GEL,

AFTER ELUTION WITH A PHYSIOL. SOLN. OF NA<sub>2</sub>CO<sub>3</sub>, BY SPECIFIC SEROL. REACTIONS (A. I. GUSEV, 1968). THE ALPHA SUB1 GLOBULINS OF THE 3

SPECIES WERE DETECTED IN THE ZONE OF POST ALBUMINS, WHILE ALPHA SUB2 GLOBULIN WAS FOUND IN THE ZONE OF GAMMA GLOBULINS AND SLOW ALPHA

GLOBULINS. AN IMMUNOL. PURE MOUSE ALPHA SUB1 GLOBULIN AND A RAT ALPHA SUB1 GLOBULIN CONTAMINATED BY 2 ANTIGENIC ADMIXTS. WERE OBTAINED BY DISC ELECTROPHORESIS. THIS TECHNIQUE, FOLLOWED BY THE REMOVAL OF ALBUMINS

BY SPECIFIC ANTIBODIES, PERMITTED THE PURIFICATION OF HUMAN ALPHA SUB1 GLOBULIN THAT CONTAINS ONLY A NEGLIGIBLE AMT. OF TRANSFERRIN.

FACILITY: LAB. CANCER IMMUNOCHEM., INST, EXP. MED., MOSCOW, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--STRUCTURE OF PI OLEFINIC AND PI ACETYLENIC COMPLEXES OF TRANSITION  
METALS -U-  
AUTHOR-(02)-GUSEV, A.I., STRUCHKOV, YU.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(?), 368-400

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKENE, ACETYLENE HYDROCARBON, COMPLEX COMPOUND, X RAY STUDY:  
TRANSITION METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----F070/605018/B11 STEP NO--UR/0192/70/011/002/0368/0400

CIRC ACCESSION NO--AP0140799

UNCLASSIFIED



2/2 017 UNCLASSIFIED PROCESSING DATE--04DEC 77  
CIRC ACCESSION NO--AP0140799  
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A REVIEW THROUGH 1969, INCLUDING  
THE RESULTS OF X RAY DETNS., WITH 114 REFS. FACILITY: INST.  
ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.762:669.013.5(033.8)

AMOSOV, V. M., KARELIN, B. A., KITAYEV, B. L., SAVICHEVA, M. A., GUSEV, A. M.,  
PAPILOV, V. P., and STEPANOVA, T. I.

"Powder Metal Alloy"

USSR Author's Certificate No 254092, filed 12 Jun 69, published 20 Mar 70  
(from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G357 P)

Translation: A powder metal electrode alloy based on W is proposed for spark gaps. To stabilize the emission properties and to increase the rate of electrode atomization barium zirconate is introduced into the alloy composition. The barium zirconate possesses stable properties under the conditions of exploitation and does not interact with the remaining components of alloy during sintering in the temperature interval 1550-1600°. The alloy is of the following composition: 0.5-4% Ni, 4-5% barium zirconate, and the remainder -- W. The alloy structure is in the form of fine-grain W, coated with solid W solution in Ni, and dispersed particles of barium zirconate uniformly distributed in grains and along grain boundaries.

V. Chelnokov

1/1

USSR

UDC 621.374.33

LOSKUTOV, B. P., LEBEDEV, V. I., and GUSEV, A. V.

"Calculation of the Duration of Blanking Processes in Five Diode Circuits for Activating an Integrated Transistor"

V sb. Mikroelektronika. Vyp. 1 (Microelectronics. No 1—collection of works), Moscow, Atomizdat, 1971, pp 63-74 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G305)

Translation: A quantitative study is made of the blanking processes in integrated microcircuits in which semiconductor diodes made simultaneously with the transistors are actually formed by the integrated transistor structures. The analysis is done by solving continuity equations for the minority nonequilibrium carriers in the base and collector of the integrated drift transistor with regard to the effect of barrier capacitances. It is shown that in a single microcircuit, diodes can be produced with a resorption time from hundredths of a ns to several  $\mu$ s, using five diode circuits for transistor activation. Bibliography of ten titles.  
N. S.

1/1

USSR

UDC 621.039

KIR'YANOV, G. I., ALLAKHVERDOV, A. Sh., GUSEV, A. V., and KOLGANOVA, I. V.

"Development of a Pulsed Neutron Generator to Study Reactors"

Tr. VNII radiats. tekhn. (Works of the All-Union Scientific Research Institute of Radiation Technology), 1970, No 5, pp 265-274 (from RZh-Fizika, No 4, Apr 71, Abstract No 4V583)

Translation: A neutron generator was developed with a mean neutron flux of  $10^7$  neutron/sec with a pulse repetition rate of up to 20 Hz and a pulse width of  $\sim 1.5$   $\mu$ sec. The length of the neutron source is 1100 mm and the diameter is 48 mm. Measurement of the operating stability of the generator showed that in 2 hours of operation the maximum deviation of the output of neutrons from the mean value did not exceed 8%. O. V. Sh.

1/1

- 68 -